

We claim:

1. Process for producing anhydrous alkali sulfide, comprising spray drying a composition selected from the group consisting of an alkali sulfide solution, alkali sulfide suspension, alkali sulfide dispersion and alkali sulfide water of crystallisation melt with inert drying gas loaded with water vapour to dry said composition and thereby produce anhydrous alkali sulfide.
2. Process for producing anhydrous alkali sulfide according to claim 1, further comprising drying under normal pressure or a slight overpressure of $\Delta p=0$ to 200 mbar above ambient pressure.
3. Process for producing anhydrous alkali sulfide according to claim 1, wherein inert gas in stationary operation is avoided.
4. Process for producing anhydrous alkali sulfide according to claim 1, further comprising recycling the drying gas, the use of inert gas in stationary operation is avoided and excess water vapour is removed by condensation so that it is free from exhaust gases.
5. Process for producing anhydrous alkali sulfide, comprising spray drying a composition selected from the group consisting of an alkali sulfide solution, alkali sulfide suspension, alkali sulfide dispersion and alkali sulfide water of crystallization melt with inert drying gas loaded with water vapour wherein the inert gas is a member selected from the group consisting of nitrogen, helium, argon and mixtures thereof and wherein the water vapor load is greater than 1 g/kg at a dew point of -15°C .
6. Process for producing anhydrous alkali sulfide according to claim 5, wherein that drying is performed under normal pressure or a slight overpressure of $\Delta p=0$ to 200 mbar above ambient pressure.
7. Process for producing anhydrous alkali sulfide according to claim 5, wherein a solution of $\text{Na}_2\text{S} \cdot x\text{H}_2\text{O}$ ($3 \leq x \leq 9$) is spray dried.

8. Process for producing anhydrous alkali sulfide according to claim 5, wherein said composition is atomized and brought into contact with a hot gas stream of the inert drying gas.

9. Device for performing the process according to claim 1, comprising

- 5 - a drying chamber, containing an atomising device inside said chamber for conveying a dryer feed, a feed device for supplying drying gas to said chamber, a discharge outlet for the exhaust of gas stream from said chamber, a solids separation system connected to the chamber by said discharge outlet and containing an exhaust air pipe optionally fitted with a filter unit to remove the gas stream, a plant for recovering
- 10 solvent from the exhaust gas stream and a recycling and conditioning apparatus for at least partial recycling and conditioning of the exhaust gas for renewed use as the drying gas.